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EXAMINER

PEREZ, ANGELICA

ART UNIT PAPER NUMBER

2618

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,861

Applicant(s)

HAYASHI ET AL.

Examiner

Angelica M. Perez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-10,13-21,24-29,32-36,38,41-45,47,49 and 52-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-10,13-21,24-29,32-36,38,41-45,47,49 and 52-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-2, 20-21, 36 and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Parmenter (Parmenter, Kevin C.; US Patent No.: 6,615,052 B1).

Regarding claims 1 and 20, Parmenter teaches of a transmission power control apparatus (column 4, lines 7-11; e.g., "control processor") and method (column 4, lines 12-19) for a wireless communication apparatus for reducing a power value of a signal input to a power amplifier to the maximum allowable input power value of the power amplifier or below (column 4, lines 1-11; where the control processor adjusts the power to a "limit" output power corresponding to a "maximum allowable input"), the

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transmission power control apparatus comprising: a setting part for setting a transmission power upper limit value of a call according to a circuit type of the call, where the circuit type includes a packet switching type and a circuit switching type (column 3, lines 6-9; where the settings are preset according to the communication type, voice or data; where packet switching type corresponds to data communications and circuit switching type corresponds to voice communications), the transmission power upper limit value comprising a first transmission power upper limit value and a second transmission power upper limit value, where the first transmission power upper limit value corresponds to the packet switching type call and the second transmission power upper limit value corresponds to the circuit switching type call (column 3, lines 6-9; where the settings are preset according to the communication type, voice or data; where packet switching type corresponds to data communications and circuit switching type corresponds to voice communications). Therefore a first upper limit or second upper limit value is preset according to the type of communication), where the first transmission power upper limit value is lower than the second transmission power upper limit value; and of a packet switching type or for a call of a circuit switching type (column 3, lines 6-18; where the first upper limit value is smaller than a second upper limit value if it corresponds to the limit for voice communications); and a power reducing part for reducing transmission power for the call to or below the transmission power upper limit value depending on the call type (column 2, lines 62-67).

Regarding claims 2 and 21, Parmenter teaches all the limitations of claims 1 and 20, respectively. Parmenter further teaches where the setting part sets the first transmission power upper limit value according to a degree of delay and a degree of bit-error rate (BER) which can be allowed for the circuit switching type (column 3, lines 6-20; where inherently voice and data channels require different degrees of delay. E.g., voice that corresponds to circuit switching type does not tolerate high degrees of delay and high BER).

Regarding claims 36 and 47, Parmenter teaches of a method (column 4, lines 12-19) and a transmission power control apparatus (column 4, lines 7-11; e.g., "control processor") for a wireless communication apparatus for reducing a power value of a signal of calls input to a power amplifier to the maximum allowable input power value of the power amplifier or below (column 4, lines 1-11; where the control processor adjusts the power to a "limit" output power corresponding to a "maximum allowable input"). Toskala teaches of a base station in a wireless communications system that comprises the power control apparatus (col. 44, lines 4-19). Parmenter further teaches of the transmission power control apparatus comprising: a classifying part for classifying calls into a circuit switching type group and packet switching type group (figure 3, item 318; where the calls are classified as data calls, 322 or voice calls, 320); a power setting part for setting a first transmission power upper limit value of circuit switching type group and a second transmission power upper limit value of the packet switching type group (column 3, lines 6-9; where the settings are preset according to the communication type, voice or data; where packet switching type corresponds to data communications

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and circuit switching type corresponds to voice communications), where the second transmission power upper limit value is lower than the first transmission power upper limit value; and a power reducing part for reducing a power value individually for each group such that a power value of the calls is equal to or below the maximum allowable input power value of the power amplifier (column 4, lines 1-11; where the control processor adjusts the power to a "limit" output power corresponding to a "maximum allowable input". Also, the adjustment is done for each channel and each channel transmits a type of communication, voice or data).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-7 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmenter in view of Chuah et al. (Chuah, US Patent No.: 6,587,672 B1).

Regarding claims 7, 24 and 26, Parmenter teaches all the limitations of claims 1 and 20, respectively.

Parmenter does not teach where the setting part monitors occurrence of over-input to the power amplifier, and sets another transmission power upper limit value when the over-input occurs.

In related art, concerning a method and apparatus for enhanced power ramping via multi-threshold detector, Chuah teaches where the setting part monitors occurrence of over-input to the power amplifier, and sets another transmission power upper limit value when the over-input occurs (column 8, lines 40-46; where the power level exceeds a threshold and the a higher power limit transmit is set; e.g., "1 dB" higher).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's transmission power control apparatus with Chuah's power upper limit change in order for not limiting the signal detection to access request signals but rather other type of signals, e.g., data signal, control signal or other type of signal, as taught by Chuah.

Regarding claims 6 and 25, Parmenter in view of Chuah teaches all the limitations of claims 1 and 24, respectively. Parmenter further teaches where the setting part reduces the first upper limit value by a first predetermined ratio when the over-input to the power amplifier occurs, and the setting part increases the first upper limit value by a second predetermined ratio which is lower than the first predetermined ratio when the over-input to the power amplifier does not occur (column 8, lines 12-20; where if there is no over-input, the power level is reduced to a minimum allowable in order to optimize power consumption).

6. Claims 8 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmenter in view of Johansson et al. (Johansson, US Patent no.: 6,804,520 B1).

Regarding claims 8 and 27, Parmenter teaches all the limitations of claims 1 and 20, respectively.

Parmenter does not teach where the setting part monitors occurrence of call loss, and sets another transmission power upper limit value when the call loss occurs.

In related art, concerning a temporary serviced interruption for high speed data transfer, Johansson teaches of where the setting part monitors occurrence of call loss, and sets another transmission power upper limit value when the call loss occurs (columns 1 and 2, lines 63-67 and 1-18, respectively and columns 5 and 6, lines 19-67 and 1-29, respectively; where the system records information regarding loss of communication; e.g., de-allocation, and the transmit power is adjusted in order to prevent loss of calls or overload of the system).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's transmission power control apparatus with Johansson's adjustment transmission power upper limit value when the call loss occurs in order to prevent loss of calls or overload of the system, as taught by Johansson.

7. Claims 9-10, 13-14, 17-18, 37-45, 28-29, 32-33 and 49, 52-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parmenter in view of Toskala et al. (Toskala, US Patent 6,374,118 B1).

Regarding claims 9, 19 and 28, Parmenter teaches of a transmission power control apparatus and method for a wireless communication apparatus for reducing a

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power value of a signal input to a power amplifier to the maximum allowable input power value of the power amplifier or below (column 4, lines 1-11; where the control processor adjusts the power to a "limit" output power corresponding to a "maximum allowable input"), the transmission power control apparatus comprising: a target SIR setting part for setting the first control target SIR value for a packet switching type call and a second control target SIR value for a circuit switching type call (columns 2, 6 and 7, lines 3-16, 10-12 and 1-17, respectively; where the settings comply with the type of service; e.g., target SIR for speech and data are "-4.2 dB" and "-3.5 dB", respectively), teaches where the first control target SIR is smaller than the second control target SIR (col. 6, line 10-12; where "-4.2 dB" is smaller than "-3.5 dB").

Parmenter does not specifically teach of a SIR determining part for determining a control target SIR according to a circuit type of the call; where the circuit type includes a packet switching type and a circuit switching type, the control target SIR value comprising a first control target SIR value and a second control target SIR value, the first and second control target SIR values corresponding to the circuit type.

In related art, concerning a method of physical radio channel power control, Toskala teaches of a SIR determining part for determining a control target SIR according to a circuit type of the call; where the circuit type includes a packet switching type and a circuit switching type (columns 3 and 6, lines 37-67, respectively; where the carrier/interference is set according to the service; e.g., "circuit-switched" or "packet-switched"), the control target SIR value comprising a first control target SIR value and a second control target SIR value, the first and second control target SIR values

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corresponding to the circuit type (column 6, lines 12-25; where the control values are set according to the call type); and a target SIR sending part for sending the first control target SIR value and a second control target value to a communication station ((columns 2, 6 and 7, lines 3-16, 10-12 and 1-17, respectively; where the settings comply with the type of service; e.g., target SIR for speech and data are “-4.2 dB” and “-3.5 dB”, respectively); where the sent SIR determines the type of service required and the power; where the information is send to the BS in order to allocate the power according to the service type).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's transmission power control apparatus with Toskala's SIR determining part in order to perform power control according to the service required, as taught by Toskala.

Regarding claims 10 and 29, Parmenter in view of Toskala teaches all the limitations of claims 9 and 28, respectively. Toskala further teaches where, the SIR determining part sets the control target SIR according to a degree of delay and a degree of bit-error rate (BER) which can be allowed for the circuit switching type (columns 6 and 8, lines 10-12 and 26-42; where the SIR target is set according to the delay of the communication service and where data and speech tolerate different degrees of delays. Speech tolerates a lower degree of delay as well as a lower BER).

Regarding claim 58-61 Parmenter teaches all the limitations of claims 1 and 20, respectively. Toskala further teaches where the setting part sets the second transmission power upper limit value according to a degree of delay and a degree of bit-

error rate (BER) which can be allowed for the packet switching type/circuit switch (columns 6 and 8, lines 10-12 and 26-42; where the SIR target is set according to the delay of the communication service and where data and speech tolerate different degrees of delays. data tolerates a higher degree of delay as well as a higher BER. Circuit switch tolerates lower degree of delay as well as a lower BER).

Regarding claims 13, 32 and 34, Parmenter in view of Toskala teaches all the limitations of claims 9, 29 and 28, respectively. Toskala further teaches where the SIR determining part monitors occurrence of over-input to the power amplifier, and sets another control target SIR when the over-input occurs (col. 6, lines 21-25; where if capacity is exceeded, power is increased in order to accommodate for the over-input).

Regarding claims 14 and 33, Parmenter in view of Toskala teaches all the limitations of claims 13 and 32, respectively. Parmenter further teaches where, the SIR determining part reduces the first control target SIR by a first predetermined ratio when the over-input to the power amplifier occurs, and the SIR determining part increases the first control target SIR by a second predetermined ratio which is lower than the first predetermined ratio when the over-input to the power amplifier does not occur (column 8, lines 12-20; where if there is no over-input, the power level is reduced to a minimum allowable in order to optimize power consumption). Toskala further teaches of the SIR determining part (column 6, lines 13-25; where the sent SIR determines the type of service required and power).

Regarding claim 17, Parmenter teaches all the limitations of claim 1.

Parmenter does not specifically teach where the transmission power control apparatus is provided in a base station of a wireless communication system.

In related art, concerning a method of physical radio channel power control, Toskala teaches where the transmission power control apparatus is provided in a base station of a wireless communication system (col. 44, lines 4-19).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's transmission power control apparatus with Toskala's transmission power control apparatus in a base station in order to provide provide both up-link and down-link communications in a cellular communications system, as taught by Toskala.

Regarding claim 18, Parmenter in view of Toskala teaches all the limitations of claim 9. Toskala further teaches where the transmission power control apparatus is provided in a base station of a wireless communication system (col. 44, lines 4-19).

Regarding claims 38 and 49, Parmenter in view of Toskala teaches all the limitations of claims 36 and 47, respectively. Parmenter further teaches, where the classifying part classifies the calls according to degree of delay and a degree of bit-error rate (BER) which is allowed by a circuit type of each call (figure 3, item 318; where the calls are classified as data calls, 322 or voice calls, 320 and column 3, lines 6-20; where inherently voice and data channels require different degrees of delay. E.g., voice does not tolerate high degrees of delay and data can tolerate higher degrees of delay).

Regarding claims 41 and 52, Parmenter in view of Toskala teaches all the limitations of claims 36 and 47, respectively. Parmenter further teaches where the

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power reducing part reduces only a power value of a group of the packet switching type (col. 4, lines 30-35; where each channel transmits a certain type of communication; therefore, when the power of a channel is reduced, only the power of one type of call is reduced; e.g., "packet switching type").

Regarding claims 42 and 53, Parmenter in view of Toskala teaches all the limitations of claims 36 and 47, respectively. Parmenter further teaches where the number of the plurality of groups and the upper limit value for each group are changed according to types of the calls (col. 4, line 30-35).

Regarding claims 43 and 54, Parmenter in view of Toskala teaches all the limitations of claims 36 and 47, respectively. Parmenter further teaches where the classifying part assigns priority for each call according to circuit characteristics of the each call, and the power reducing part reduces a power value of a call according to the priority (col. 7, lines 33-46; e.g., voice requires higher priority due to its low tolerance delay characteristic).

Regarding claims 44 and 55, Parmenter in view of Toskala teaches all the limitations of claims 43 and 54, respectively. Parmenter further teaches where the classifying part assigns the priority such that the larger a degree of delay which is allowed by the call is, the lower the priority is (col. 7, lines 33-46; e.g., voice requires higher priority due to its low tolerance delay characteristic), and, the power reducing part reduces each power value of a part of calls in ascending order of the priority such that a power value of calls input to the power amplifier is equal to or below the maximum allowable input power value of the power amplifier (col. 1, lines 30-35; where

data calls have lower priority due to higher tolerance delay characteristic and can take a reduction of power ahead of voice calls).

Regarding claims 45 and 56, Parmenter in view of Toskala teaches all the limitations of claims 44 and 55, respectively. Parmenter further teaches where a power value of a call which has priority within predetermined levels from the highest priority is not reduced (col. 8, lines 18-23; where the call with the highest priority is not reduced due to the fact that there are many other calls with lower priority whose power will be reduced first; thus, it is very unlikely for the call with the highest priority to receive power reduction at all).

8. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmenter in view of Toskala, and further in view of Chuah.

Regarding claims 15, Parmenter in view of Toskala teaches all the limitations of claim 9. Toskala further teaches of the SIR determining part (column 6, lines 13-25; where the sent SIR determines the type of service required and power).

Parmenter in view of Toskala does not teach where the determining part monitors occurrence of over-input to the power amplifier, and sets another control target when the over-input occurs.

In related art, concerning a method and apparatus for enhanced power ramping via multi-threshold detector, Chuah teaches where the setting part monitors occurrence of over-input to the power amplifier, and sets another transmission power upper limit value when the over-input occurs (column 8, lines 40-46; where the power level exceeds a threshold and the a higher power limit transmit is set; e.g., "1 dB" higher).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's and Toskala transmission power control apparatus with SIR determining part with Chuah's power upper limit change in order for not limiting the signal detection to access request signals but rather other type of signals, e.g., data signal, control signal or other type of signal, as taught by Chuah.

9. Claim 57 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parmenter in view of Toskala, and further in view Blois et al. (Blois, US Patent No.: 006,389,088 B1).

Regarding claim 57, Parmenter in view of Toskala teaches all the limitations of claim 54. Parmenter further teaches the steps of: assigning the priority such that the larger a degree of delay which can be allowed by the call, the lower the priority is (col. 7, lines 33-46; e.g., voice requires higher priority due to its low tolerance delay characteristic); determining at least a power reduction subject call from a call having the lowest priority in ascending order of priority such that a power value of calls input to the power amplifier becomes equal to or below the maximum allowable input power value if it is assumed that each power value of the at least a power reduction subject call is reduced to a minimum power value which can maintain synchronization (col. 1, lines 30-35; where data calls have lower priority due to higher tolerance delay characteristic and can take a reduction of power ahead of voice calls); reducing each power value of calls in the at least a power reduction subject call other than calls having the highest priority; and reducing each power value of calls having the highest priority in the at least a power reduction subject call evenly by a predetermined ratio such that a power value of

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calls input to the power amplifier becomes equal to or below the maximum allowable input power value (column 8, lines 18-20; where the power level is reduced in order to optimize the power consumption).

Parmenter in view of Toskala does not specifically teaches of at least a power reduction subject call to a minimum power value which can maintain synchronization.

In related art, concerning synchronization and tracking in a digital communication system, Blois teaches of at least a power reduction subject call to a minimum power value which can maintain synchronization (columns 11 and 12, lines 66-67 and 1-2; where synchronization is maintained when the power is above a minimum power limit).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's and Toskala's transmission power control apparatus with Bois's maintenance of synchronization at a minimum power level in order to maintain communication, as taught by Blois.

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toskala in view of Parmenter.

Regarding claims 16 and 35, Parmenter in view of Toskala teaches all the limitations of claims 9 and 28, respectively.

Parmenter in view of Toskala does not teach where the setting part monitors occurrence of call loss, and sets another transmission power upper limit value when the call loss occurs.

In related art, concerning a temporary serviced interruption for high speed data transfer, Johansson teaches of where the setting part monitors occurrence of call loss,

and sets another transmission power upper limit value when the call loss occurs (columns 1 and 2, lines 63-67 and 1-18, respectively and columns 5 and 6, lines 19-67 and 1-29, respectively; where the system records information regarding loss of communication; e.g., de-allocation, and the transmit power is adjusted in order to prevent loss of calls or overload of the system).

It would have been obvious to a one of ordinary skill in the art at the time the invention was made to combine Parmenter's and Toskala's combined transmission power control apparatus with Johansson's adjustment transmission power upper limit value when the call loss occurs in order to prevent loss of calls or overload of the system, as taught by Johansson.

11. Applicant's arguments with respect to claims 1-2, 6-10, 13-21, 24-29, 32-36, 38, 41-45, 47, 49, 52-61 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angelica Perez whose telephone number is 571-272-7885. The examiner can normally be reached on 7:00 a.m. - 3:30 p.m., Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either the PAIR or Public PAIR. Status information for unpublished applications is available through the Private PAIR only. For more information about the pair system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Information regarding Patent Application Information Retrieval (PAIR) system can be found at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2600's customer service number is 703-306-0377.

Angelica Perez
(Examiner)

EDAN ORGAD
PATENT EXAMINER

h.o. 3/31/06

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March 31, 2006